

Beginning at the tidewater lock at Eddyville the boats passed through Rondout Creek for three miles to the point where the actual canal began. The canal rose through a series of fifty locks to an elevation of five hundred and twenty-five feet above sea level near Phillipsport then continued along at that level for sixteen miles to the Neversink River before descending again fifty-eight feet through a series of six locks to the Port Jervis twelve-mile level. From the western end of this level at Butler's Falls on the Delaware River, the canal rose to an elevation of nine hundred and seventy-two feet at its terminus in Honesdale. Originally there were in all one hundred nine locks with an average lift of ten feet, although some had a lift of twelve feet, others as little as eight. Each lock was seventy-six feet in length nine feet in width and the early

boats which they accommodated were small, being seventy feet in length and only eight feet seven inches in width.

Contrary to expectations, very little progress had been made during 1828 towards the completion of the Gravity Railroad from Honesdale to the mines and during 1829 further delays developed so that it was not until October 8, 1829, that the first loaded coal car reached Honesdale. In the meantime the 7,000 tons of coal which were shipped through the canal during 1829 had been hauled over the Rixe's Gap road by wagon and sledge.

When John B. Jervis, then chief engineer for the company, was assigned the task of planning the railroad there were but a few miles of railroad in operation anywhere in the world. In fact four years later, on January 2, 1832 the American Railroad Journal in its first issue gave out the following "list of railroads now constructing, several of which are in part completed and in successful operation:

- (1) Baltimore & Ohio, whole length 250 miles, 60 miles completed.
 - (2) Albany & Schenectady whole length 16 miles, 12 miles in use.
 - (3) Charleston & Hamburg, whole length 135 miles, about 20 miles completed upon which the United States mail is carried.
 - (4) Mauch Chunk, 9 miles completed and in use.
 - (5) Quincy, near Boston, 6 miles now in use.
 - (6) Ithica & Owego, 29 miles.
 - (7) Lexington & Ohio, 75 miles.
 - (8) Camden & Amboy, 50 miles.
 - (9) Lackawaxen, 16 miles."
- (The last named was the D. & H. Gravity.)

The locomotive had yet to make its appearance in this country, nevertheless, the following optimistic article appeared in the Dundaff, Pa., "Republican."

December 20, 1828: "The railway is to be furnished with five stationary engines and seven locomotive steam engines. It is estimated that the railway and its appendages will transport 540 tons per day in one direction. The steam engines were taken up as soon as the canal was navigable and it is expected that the railway will be in operation as early as June next."

The steam engines "takes up" were, of course, the stationary engines for use at the heads of the planes.

There was great activity at the head of the canal late in 1828 and during 1829 for, while we do not know the number of men and teams engaged in hauling coal, the number must have been considerable, and the village of Honesdale had begun to grow rapidly, for we read in Hazard's Register, "Philadelphia, February 28, 1829.

"Honesdale is situated in the Lackawaxen Valley at the confluence of the Lackawaxen River and Dyberry Creek three miles and a half southeast of Bethany. Two years ago the site of the village

was occupied by woods, but since the commencement of active operations near the head of the Lackawaxen Canal and on the railroad, both of which terminate near this place of a town has been laid out on this spot and now contains 18 dwelling houses, four stores, a tavern, a post office and the offices of the Delaware & Hudson Canal Co." "The Gravity"

As we have said, the only railroads which existed were in the earliest experimental stage when John B. Jervis undertook the building of the D. & H. Canal Company's Gravity Railroad or, as it became more familiarly known locally, "The Gravity." Steel or even soft iron rails were unknown then, so the road as Jervis originally built it consisted of 6 x 12 inch stringers of hemlock set on edge to form the rails. These stringers which were twenty to thirty feet in length were notched into heavy cross ties to which they were secured by wooden pegs. The crossties were placed ten to fifteen feet apart and were in turn supported by wood or stone piers and thus the whole structure was held clear of the ground to prevent rotting. The running edge of the rails was protected from wear by a strip of strap iron one-half inch thick by two and one-half inches wide and was secured to the rails by countersunk screws.

The planes on the original gravity road had double parallel tracks whereas the single tracked levels were provided with sidings. Actually there were no "levels" on the road, the term being only relative for while the grade on the planes was extremely steep, there was a slight grade on the levels favoring the loaded cars so that it was necessary to haul the empties back

by mules or horses. Each horse hauled five cars, one of which was the car in which he rode as the train was returning by gravity.

Beginning at an elevation of 1,200 feet at Carbondale, the "Gravity" rose to an elevation of 1,907 feet at Rixe's Gap through a series of five planes and the intervening levels. The road then descended the east side 985 feet at Honesdale. The planes were numbered eastward from Carbondale. Numbers 1 to 5 being on the west side of the ridge; 6, 7, and 8 on the east.

Stationary steam engines were located at the summit of each of the first five planes. Each engine operated two huge drums placed in tandem, being eight feet in diameter and having a flanged rim nine inches wide. Around each pair of these drums a huge chain made three turns thence passing to the foot of the plane where it was attached to a trip of loaded cars. The other end of the chain was attached to a like number of empty cars being lowered which acted as a counter balance and thus left only the dead weight of the coal to be overcome by the hoisting engine.

Only one of the drums was geared to the engine, the other acted merely as an idler helping to create friction and prevent the chains from slipping.

On planes 6, 7, and 8, where the loaded cars were descending, no motive power was required. A braking system was provided, consisting of two drums similar to those of the powered planes but connected merely to a heavy brake.

Considering the lacking of experience with such contrivances, the hoisting engines and drums seem to have been a reasonable success, but the chains were an absolute failure and were discarded in favor of ropes after having been in use only a few months during 1829. Concerning them, Dr. Benjamin Sillman wrote to Mr. Hazard of Philadelphia during July, 1830:

"Last year there was much inconvenience from chains by which the steam engines draw up the coal wagons from the mines; during the season about fifty coal wagons were dashed to pieces in that manner, and when chains parted the wagon could not be seen in its descent; so instantaneously did it dart to its goal, that only a dim streak could be traced any longer occur."

On December 12, 1830, John Bolton, the president of the company, wrote to the Governor of New York a letter in which he said:

"Our railway has fully met our expectations, since the substitution of ropes for chains on the planes. The change, however, which was effected at the close of winter was very expensive."